Topic Teams: Direction & Priorities

California Hydrogen Highway Implementation Advisory Panel Kick-off

May 20, 2004

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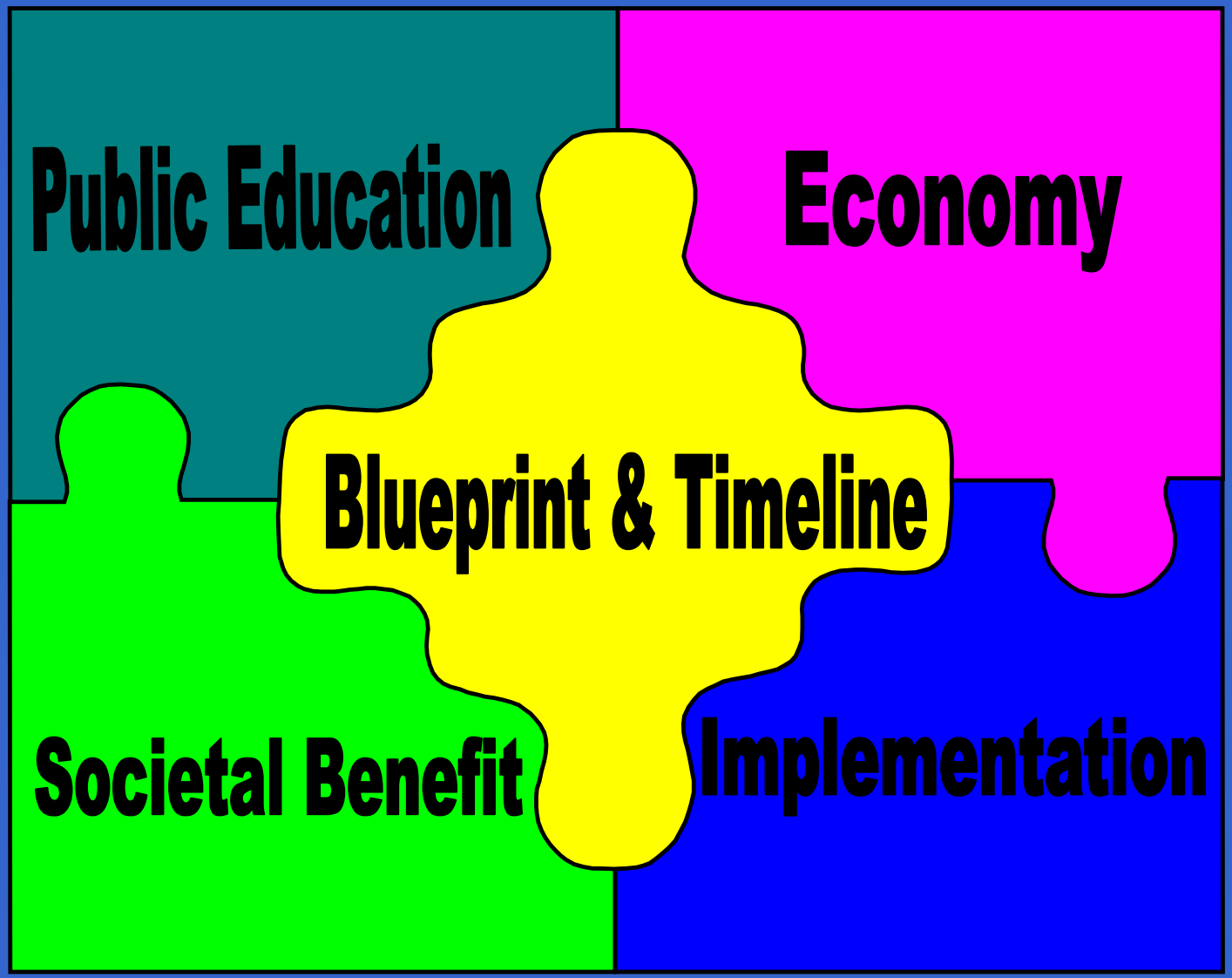
Topic Team Responsibilities

- Examine key issues, probe areas of contention, recommend and prioritize solutions, and acknowledge significant dissenting viewpoints
- Develop and present a plan to address their given challenge at a public hearing for discussion
- Ellicit and address public testimony from stakeholders
- Present the materials at the subsequent Panel forum

Topic Team Structure

- Team Co-Chairs (3), Team Manager, & EO Team Representative
- Flexible Team structure to accommodate needs of Team
- Leadership of Teams is determined by Panel & EO Team
- Inclusiveness and sub-Teams are recommended
- Limited technical support provided by contractor

Topics


Public Education
Economy
Blueprint & Timeline
Societal Benefit
Implementation

Public Education –
Marketing, Communications, and Education

Recommend a plan along with a timeline to address the specific outreach and education needs that will make the California Hydrogen Highway Network a success by the end of the decade and beyond.

Public Education –
Marketing, Communications, and Education

Elements to consider/include:

- Who are the appropriate audiences: Legislators, decision-makers, local governments, permitting and fire officials, emergency responders, public agencies, the media, the general public, educators, children, others…
- How and when to target individual audiences
- Curriculum development and incorporation
- How to utilize work of other groups – DOE, HydrogenWorks, etc
- How do we frame the messages: safety, the need for hydrogen, the benefits of hydrogen, harms of petroleum
- Who will conduct the education and who will pay for it
- Do we need a Flex Your Power like marketing campaign for hydrogen and if so, when
- Is legislation necessary
- What is the potential detriment if we do not target some groups?
- Is there a good reason to “brand” hydrogen?

Societal Benefit –
Environment & Public Health

Recommend a plan and timeline that will address environmental, health and other social concerns related to the production and use of hydrogen as a fuel.

Societal Benefit –
Environment & Public Health

Elements to consider/include:

- Policy strategies to ensure hydrogen generation results in the lowest possible emissions of greenhouse gases and other air pollutants.
- Promoting environmental benefits of renewable hydrogen (including global climate change) through public policy and other appropriate methods
- Recommendations for appropriate incentives to encourage the purchase of hydrogen powered vehicles and to encourage the development of renewable sources of energy for hydrogen production
- From an environmental standpoint, consider pros/cons of various hydrogen production methods
- Recommend timeline and targets for incentives/regulations/policies
- Assess the fiscal impacts to the State budget

Economy –
Finance, Business & Investment

Develop a proposal that includes cost estimates, a timeline, and priorities to address how to finance the California Hydrogen Highway Network and how to accelerate the commercialization of hydrogen.

Economy –
Finance, Business & Investment

- Elements to consider/include:
  - Accelerating the use of hydrogen, including but not limited to public incentives and financing mechanisms such as general obligation bonds, or revenue bonds with repayment mechanisms, loan guarantees
  - Joint power agreements, procurement agreements, competitive master contracts, and partnerships with public and private entities
  - Economic development zones for hydrogen and clean transportation industries
  - A review of immediate financing opportunities via the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA), and other existing bonding authority

Economy –
Finance, Business & Investment

- Elements to consider/include (cont'):
  - CalPERS and CalSTRS Alternative Investment Management Program
  - Economic development opportunities resulting from increased utilization of hydrogen for stationary and mobile applications
  - Cost/benefit analysis of cost of petroleum fuel/infrastructure (including externalities to the State) and the projected cost of hydrogen fuel/infrastructure
  - Modification to the requirements on existing state resources that could facilitate the implementation of hydrogen stations
  - The benefits associated with reducing the risk of underutilitzation of hydrogen stations throught the use of energy stations and co-located CNG equipment
  - The fiscal impacts to the State budget

Implementation –
Insurance, Liability, Codes & Standards

Develop a plan, along with cost estimates, a timeline, and priorities to address how to formulate a regulatory policy for the Hydrogen Highway Network and how to accelerate the commercialization of hydrogen in California

Implementation –
Insurance, Liability, Codes & Standards

- Elements to consider/include:
  - Needed safety standards, building codes, and emergency response procedures for hydrogen fueling installations and the operation of hydrogen-powered vehicles by 2010
  - Appropriate training for permit agencies, building inspectors and emergency responders by 2010the present status of hydrogen in the building codes adopted by California
  - The present status of codes and standards development for hydrogen in transportation by NFPA and ICC and others
  - Current best practices for permitting a hydrogen station
  - Development of a regulatory standard and installation template that can be applied to the rest of the U.S. at the very least

Implementation –
Insurance, Liability, Codes & Standards

- Elements to consider/include (cont'):
  - Creating an atmosphere that is friendly to business by setting clear standards that must be met without several layers of bureaucracy to address
  - The necessary education and its implementation for local permit officials and emergency responders
  - Necessary modifications to the California Code of Regulations to accommodate the use of hydrogen and hydrogen vehicles
  - Steps the State may need to take to ensure a reasonable burden to industry and the State regarding insurance and liability
  - The fiscal impacts to the State budget

Blueprint & Timeline –
Rollout Strategy

Develop a proposal that includes cost estimates, a timeline, and priorities to address how to develop and grow the California Hydrogen Highway Network and how to accelerate the commercialization of hydrogen in California

Blueprint & Timeline – Rollout Strategy

- Elements to consider/include:
  - Technology readiness assessment
  - Critical reevaluation of key assumptions regarding timing and cost of hydrogen technologies
  - The impact of the Governor's Hydrogen Highway Network initiative on accelerating the introduction of hydrogen technologies
  - Estimate cost requirements
  - Target methods of cost reduction
  - Identify a strategy to best provide access to hydrogen for all Californians

Blueprint & Timeline – Rollout Strategy

- Elements to consider/include (cont'):
  - Propose specific communities for hydrogen station location Propose specific, smart uses to commercialize hydrogen and gain public acceptance
  - Policy recommendations that will accerlerate the Governor's vision and their impacts to the State
  - Identify the best way for California's state vehicle fleet to include an increasing number of clean, hydrogen-powered vehicles when possible to be purchased during the normal course of fleet replacement
  - The fiscal impacts to the State budget